

**IMPROVED CATALYST RECOVERY SYSTEM**

**ABSTRACT**

A process for reducing boron trifluoride usage and emissions associated with PAO manufacture, the process comprising distilling a portion of the crude PAO product containing a boron trifluoride-organic catalyst at a temperature sufficient to cause the boron trifluoride-organic catalyst to dissociate to produce an overhead stream comprising uncomplexed boron trifluoride and an uncomplexed organic catalyst component, contacting the uncomplexed boron trifluoride and uncomplexed organic catalyst component in a condenser column having an internal structure that increases the recombination of the uncomplexed boron trifluoride and uncomplexed organic catalyst component to form a recycle boron trifluoride-organic catalyst.